Parallels Virtuozzo Containers 4.7 for Linux
Readme

This document provides the first-priority information about Parallels Virtuozzo Containers 4.7 for Linux and supplements the included documentation.

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1. LICENSING

You can obtain a license for Parallels Virtuozzo Containers 4.7 for Linux in one of the following ways:

- Request a license from the Parallels sales representative.
- Visit the http://www.parallels.com/download/pvc47 website, fill up a special registration form, and get a free evaluation license.

The license is needed to start using the Parallels Virtuozzo Containers software on your server.

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2. SYSTEM REQUIREMENTS

Parallels Virtuozzo Containers 4.7 for Linux comprises the Parallels Virtuozzo Containers virtualization engine for a Linux server and two web-based management tools:

- Parallels Virtual Automation is a web-based tool for managing Hardware Nodes (servers where the Parallels Virtuozzo Containers software is installed) and Containers.
- Parallels Power Panel is a web-based tool for managing individual Containers.

You can also use Parallels Management Console—a graphical user interface tool for managing Hardware Nodes and Containers.

The hardware and software requirements for Parallels Virtuozzo Containers 4.7 are the following:

- Platform:

  Any x86 or x64 platform that is supported by the Host Linux operating system.

- Memory:

  1 GB or more. The required amount depends on the total number of Containers you want to run on the server.
- Disk space:

  At least 15 GB of free disk space. The required amount depends on the size of the software to be installed in Containers.
- Network interfaces:

  One or more network cards.

  The exact server configuration depends on how many Containers you are going to run on the server and what load those Containers are going to generate.
- Operating system:

  You can install Parallels Virtuozzo Containers 4.7 on the following operating systems (both x86 and x64):

  * Red Hat Enterprise Linux 6

  * Red Hat Enterprise Linux 5

  * CentOS 6

  * CentOS 5

Parallels Virtuozzo Containers 4.7 allows you to create Containers running the following Linux distributions:

- Red Hat Enterprise Linux 5.6 and 6.x
- CentOS 5.6 and 6.x
- Debian 5.0 and 6.0
- Fedora 14
- OpenSUSE 11 with Service Packs 4
- SUSE Linux Enterprise Server 10 and 11
- Ubuntu 10.04, 10.10, and 11.04

Note: You may also try to create new Containers running other Linux distributions, but this is not guaranteed to work. This is especially true for Linux distributions that have reached the end of their life cycle.

The hardware and software requirements for Parallels Management Console include the following:

- Platform:

  450 MHz or higher Intel-compatible CPU.
- Memory:

  256 MB recommended. The required amount depends on the number of Hardware Nodes to be administered (minimum 5 MB per Hardware Node).
- Disk space:

  About 500 MB.
- Operating system:

  Microsoft Windows XP, Windows 7, Windows Server 2003, Windows Server 2008,

Windows Server 2008 R2.

To use Parallels Virtual Automation, a Client Server should run one of the following Web browsers:

- Internet Explorer 6.x and higher (Windows computers)
- Mozilla Firefox 2.x and higher (all platforms)
- Safari 3.x and higher (Mac computers)

Chances are that you will also be able to use other browsers, but Parallels Virtual Automation has not been extensively tested with them.

For information on hardware and software requirements for a server to be used as a standalone Master Server, consult the Readme for Parallels Virtual Automation available at http://www.parallels.com/products/pva46/resources.

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3. INSTALLING PARALLELS VIRTUOZZO CONTAINERS 4.7

Complete installation instructions on how to set up Parallels Virtuozzo Containers 4.7 on a dedicated server is provided in the *Parallels Virtuozzo Containers 4.7 for Linux Installation Guide* included in the current distribution.

When installing a Linux operating system on the server:

- Create three partitions on the hard drive:

  * root (*/*): allocate 10-12 GB of disk space to the / partition.

  * swap: allocate 2 times the size of the installed RAM if the RAM is less than or equal to 2 GB; otherwise, allocate the size of the installed RAM plus 2 GB.

  * */vz*: format this partition as ext3 or ext4 and allocate all the remaining free space to the /vz partition.
- Disable the firewall on the server.

Note: If you are going to split */vz* among several disk partitions, keep in mind that the Virtuozzo File System (VZFS) implementation requires */vz/template* reside on a single disk partition. It also requires the private area of a Container (*/vz/private/<CT_ID>*) reside on a single disk partition.

Before installing the software on the server, make sure that the Parallels Virtuozzo Containers 4.7 distribution is located on a persistent storage (for example, on a local file system). This is needed to ensure the accessibility of the distribution after the system reboot.

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4. NEW FEATURES AND IMPROVEMENTS

Parallels Virtuozzo Containers 4.7 includes the following new features and improvements:

- **New Kernel.** Parallels Virtuozzo Containers 4.7 comes with a new kernel based on the Red Hat Enterprise Linux 6 (RHEL 6) kernel. This kernel provides a number of improvements, including better performance, optimized process handling, better memory addressability, enhanced resource control and stability.
- **Red Hat Enterprise Linux 6 support.** Red Hat Enterprise Linux 6 is supported as both the Host and Guest operating system. You can now install Parallels Virtuozzo

Containers 4.7 on servers running Red Hat Enterprise Linux 6 and use this operating system for creating new Containers.

- **New memory management scheme.** Parallels Virtuozzo Containers 4.7 introduces a new scheme for managing memory-related parameters in Containers—*VSwap*. Like many other memory management schemes used on standalone Linux computers, this scheme is based on two main parameters: RAM and swap.
- **IPv6 support.** Parallels Virtuozzo Containers 4.7 provides full support for using IPv6 addresses with Containers, including IPv6 support by Parallels Virtual Automation.
- **Parallels Virtual Automation (PVA) 4.6.3 support.** You can use Parallels Virtual Automation 4.6.3 to manage Hardware Nodes running Parallels Virtuozzo Containers 4.7. You can choose to install the PVA components (PVA Agent and PVA Master Node) during the product installation.
- **Persistent tap devices support.** Parallels Virtuozzo Containers 4.7 now supports creating persistent tap devices in Containers.

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5. KNOWN ISSUES AND RESTRICTIONS

The list of known issues for Parallels Virtuozzo Containers 4.7 is given below.

- After installing Parallels Virtuozzo Containers 4.7 on servers that run Red Hat Enterprise Linux 5.6 or CentOS 5.6, you may fail to boot into the new kernel. To work around the problem, use the *nomodeset* option when booting into the Parallels Virtuozzo Containers kernel.

- Logging in to a Container using the *vzctl enter* command may fail if you execute the command right after starting the Container. To work around the problem, wait for a while, and try to run the command again.

- Moving back a Container that was created on an x86 Node and then migrated to an x64 Node may fail.

- Migrating a Container running an x86 guest operating system from a Node with the VDSO (Virtual Dynamically-linked Shared Object) library turned on to an x64 Node may fail. By default, the VDSO library is off on Nodes running Red Hat Enterprise Linux (RHEL) 5 and CentOS 5 and is on Nodes with RHEL 6.

  Note: This issue does affect the migration of Containers between Nodes that both run the x64 version of RHEL 6, irrespective of the VDSO state.

- Migrating a Container between Hardware Nodes may fail if the Container private area is stored on a shared storage and the *vzcache* exists for the Container (the cache might be created, for example, using the *vzkpg localinstall* command).

- Migrating Containers using the online migration type is not supported from

  - Hardware Nodes that run Parallels Virtuozzo Containers 4.7 to Nodes with Parallels Virtuozzo Containers 4.0 and 4.6.

- Hardware Nodes that run Virtuozzo 3.0 to Nodes with Parallels Virtuozzo Containers 4.7.

- Running NFSv4 servers in Containers is not supported.

- Due to discontinued GFS1 support in Red Hat Enterprise Linux 6, Parallels Virtuozzo Containers 4.7 no longer supports keeping */vz* partitions on GFS1 volumes.

- Due to a bug in Red Hat Linux Enterprise 6, active-active clusters on GFS2 storages are not supported. The issue will be fixed in one of the next Parallels Virtuozzo Containers kernel updates.

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6. FURTHER READING

In addition to this README, there are a number of other resources shipped with Parallels Virtuozzo Containers 4.7. All documents are available online at http://www.parallels.com/products/pvc/deployment-resources/.

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7. CONTACT INFORMATION

Product website: http://www.parallels.com

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